

# CBSE QUESTION PAPER

## CLASS-X

## SCIENCE

### SECTION - A

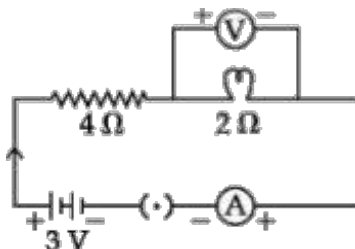
Q.1. Why decomposition reactions are called the opposite of combination reactions? *1mark*

Q.2. What happens to the resistance of a conductor when its area of cross-section is increased? *1mark*

Q.3. What is tidal energy? *1mark*

Q.4. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction? *2 Marks*

Q.5. Study the following electric circuit. *2 Marks*



Q.6. Explain briefly two methods of producing induced current. *2 Marks*

**Q.7. What are the two vital functions of the human kidneys? 2 Marks**

**Q.8. Explain why: 3 Marks**

- (a) Digestion of food is a decomposition reaction.
- (b) All decomposition reactions are endothermic reactions.
- (c) A popping sound is produced when a burning candle is brought near mouth of a test tube used in electrolysis of water.

**Q.9. (a) What happens when a strip of lead metal is placed in a solution of copper chloride? Write the balanced chemical equation for the reaction along with the colour changes observed during the reaction. 3 Marks**

**(b) What are precipitation reactions? Give one example of precipitation reaction.**

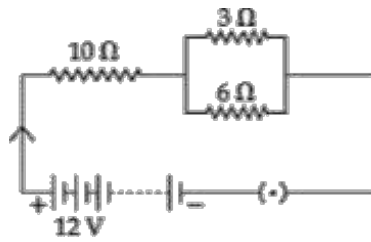
**Q.10. A solution of a substance 'X' is used for white washing. 3 Marks**

- (a) Name the substance 'X' and write its formula.
- (b) Write the reaction of the substance 'X' named in (i) above with water.
- (c) Write the balanced equation for the following chemical reaction:  
**Barium chloride + Aluminium sulphate → Barium sulphate + Aluminium chloride**

**Q.11. Farmers are using a large number of pesticides and fertilizers in their fields to increase crop production and to enhance their profits. But by doing so they are causing damage to the soil as well as to the environment. Do you agree with this statement? Why should we avoid eating fruits and vegetables without washing them properly? What values do you get from this? 3 Marks**

**Q.12. Describe the use of aluminium as reducing agent for reduction of metal oxides. Give the equations involved. 3 Marks**

**Q.13. Consider the circuit shown in the diagram. Find the current in  $3\Omega$  resistor. 3 Marks**

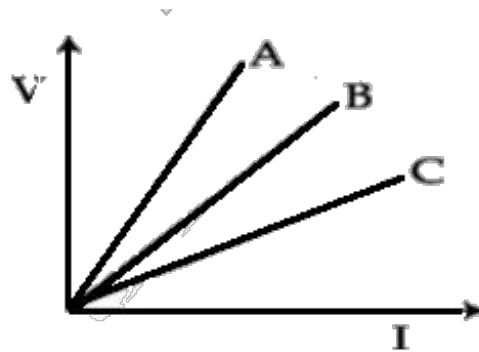


**Q.14. (a) Charcoal is a better fuel than wood. Why? 3 Marks**

**(b) How does biogas plant help to reduce the problem of pollution?**

**Q.15. A student performs an experiment with 4 cells and a resistance wire and an ammeter in series and observes that when the number of cells in the circuit is decreased, the value of current through the wire also decreases. Name the law that is involved in the experiment and write its mathematical form. 3 Marks**

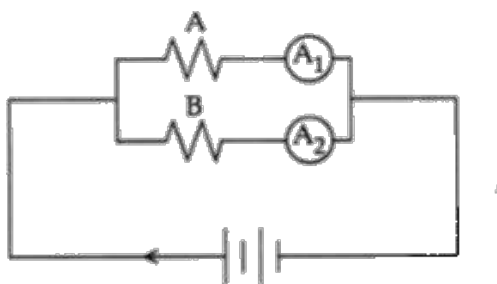
**V-I graph for two resistors  $R_1$ ,  $R_2$  and their series combination are shown in the figure below. Which graph represents the series combination of the other two? Give reason.**



- Q.16. (a)** Mention the factors on which the direction of force experienced by a current carrying conductor placed in a magnetic field depend. *3 Marks*
- (b)** Under what condition is the force experienced by a current carrying conductor placed in a magnetic field maximum?
- (c)** A proton beam is moving along the direction of a magnetic field. What force is acting on proton beam?

**Q.17.** How are involuntary actions different from reflex actions? *3 Marks*

**Q.18.** In the circuit diagram shown, the two resistance wires A and B are of same length and same material, but A is thicker than B. Which ammeter  $A_1$  or  $A_2$  will indicate higher reading for current? Give reason. *3 Marks*



**Q.19.** List any three hazards of nuclear waste. *3 Marks*

**Q.20.** A sanitary worker uses a white chemical having strong smell of chlorine gas to disinfect the water tank. *5 Marks*

- Identify the chemical compound.
- Write the chemical formula.
- Write chemical equation for preparing it.
- Write its any two uses.

**Or**

- Write an equation to show the reaction between Plaster of Paris and water.
- Name the substance which on treatment with chlorine yields bleaching powder.
- Name the sodium compound which is used for softening hard water.
- What will happen if a solution of sodium hydrogen carbonate is heated? Give the equation of the reaction involved.

**Q.21. Define corrosion. Name a metal which corrodes and one metal which does not.**

**Write any three methods of prevention of corrosion. 5 Marks**

**OR**

**Write balanced chemical equation for the reactions taking place when**

- (a) Zinc carbonate is calcinated.**
- (b) Zinc sulphide is roasted.**
- (c) Zinc oxide is reduced to Zinc.**
- (d) Cinnabar is heated in the air.**
- (e) Manganese dioxide is heated with Aluminium Powder.**

**Q.22. Briefly explain an activity to plot the magnetic field lines around a straight current carrying conductor. Sketch the field pattern for the same, specifying current and field directions. What happens to this field? 5 Marks**

- (a) If the strength of the current is decreased?**
- (b) If the direction of the current is reversed?**

**Or**

**Briefly explain an activity to plot the magnetic field lines around a bar magnet. Sketch the field pattern for the same specifying field directions. A region 'A' has magnetic field lines relatively closer than another region 'B'. Which region has stronger field? Give reason to support your answer.**

**Q.23. (a) Draw diagram of respiratory system and label the following: 5 Marks**

- (i) Part through which air is taken in.**
- (ii) Part which protects the lungs.**
- (iii) Part which carry the air into the lungs.**
- (b) What are alveoli? Mention their role in respiration.**
- (c) Differentiate between aerobic and anaerobic respiration.**

Or

(a) Draw a sectional view of the human heart and label on it the following parts:

(i) Aorta (ii) Pulmonary arteries (iii) Vena cava from upper body (iv) Left ventricle

(b) Why is double circulation of blood necessary in human beings?

**Q.24.** (a) Mention any three important functions of fore brain. *5 Marks*

(b) What are the functions of spinal cord?

Or

(a) Draw the structure of a neuron and label the following on it:

Nucleus, Dendrite, cell body and Axon.

(b) Name the part of neuron.

(i) Where information is acquired.

(ii) Through which information travels as an electrical impulse.

#### SECTION - B

**Q.25.** A student took solid quicklime in a china dish and added a small amount of water to it. He would hear: *1mark*

- A. A pop sound
- B. A crackling sound
- C. A hissing sound
- D. No sound at all

**Q.26.** A student adds a few drops of universal indicator to an aqueous solution of sodium hydroxide. He would observe that the colour of the solution changes from: *1mark*

- A. Colourless to red
- B. Colourless to blue
- C. Red to blue
- D. Blue to red

**Q.27.** A colourless sample was tested with a strip of pH paper. The colour of the strip changed to green. The sample should be: *1mark*

- A. Tap water**
- B. Distilled water**
- C. Sodium hydroxide**
- D. Lemon juice**

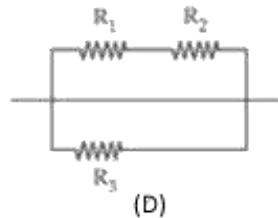
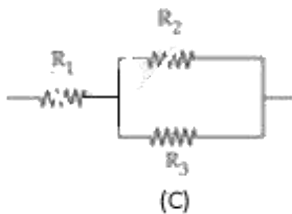
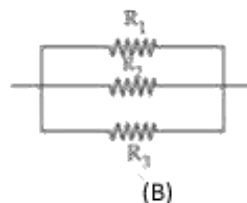
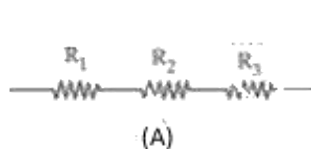
**Q.28.** When blue litmus is added to a solution of acetic acid, it turns red. When excess of NaOH is added to the above solution, it will be observed that the mixture: *1mark*

- A. Remains red**
- B. Becomes colorless**
- C. Turns blue**
- D. Turns green**

**Q.29.** An iron nail was kept immersed in aluminum sulphate. After about an hour, it was observed that: *1mark*

- A. The colourless solution changed to light green.**
- B. The solution becomes warm.**
- C. Grey metal is deposited on the iron nail.**
- D. The solution remains colourless and no deposition is observed on iron nail.**

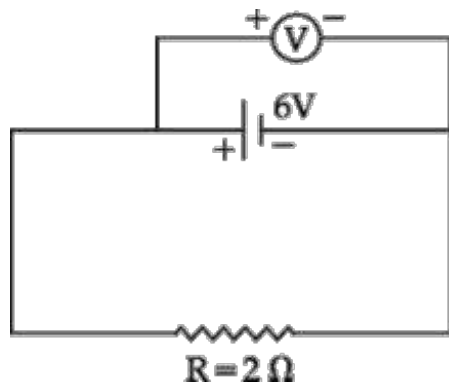
**Q.30.** To determine the equivalent resistance of three resistors arranged in parallel four students connected the resistors as shown in figures A, B, C and D.



Which one is correct? *1mark*

- A. A
- B. B
- C. C
- D. D

Q.31. When a student connects a voltmeter across the terminals of a battery, it measures 6 V. If he connects a resistance of  $2\Omega$  across the terminals of the battery as shown in the figure, then the current flowing through this resistance (R) must be: *1mark*



- A. 2A
- B. 3A
- C. 4A
- D. 6A

Q.32. The range of a voltmeter is 0 to 2.0V. If it has 20 divisions between 0 mark and 0.5 V mark, the least count is: *1mark*

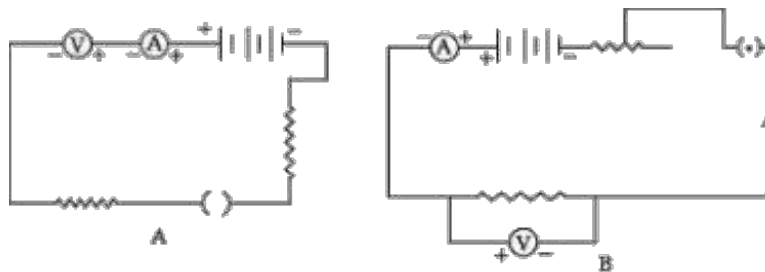
- A. 0.020 V
- B. 0.025 V
- C. 0.050 V
- D. 0.250 V



Q.33. Which one of the following precaution is NOT to be taken while conducting the experiment to determine the equivalent resistance of two resistors connected in series? *1mark*

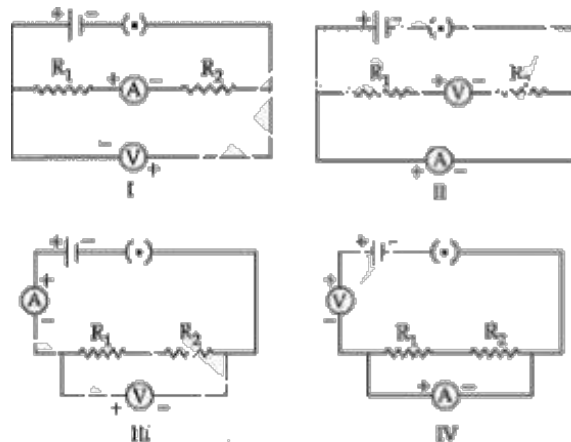
- A. Get the circuit diagram checked by your teacher before passing current.
- B. Connect +ve terminal of the ammeter to the +ve terminal of the battery.
- C. Wait at least for 30 seconds after closing the key.
- D. Take care that the battery is not short circuited.

Q.34. Which of the following experimental set up is correct for verification of Ohm's law? *1mark*



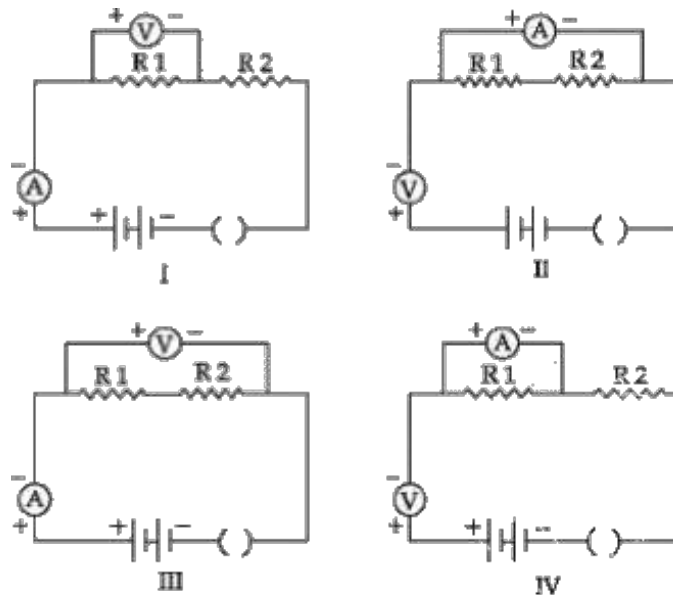
- A. A
- B. B
- C. Both A and B
- D. Neither A nor B

Q.35. In the experiment to determine equivalent resistance of two resistors  $R_1$  and  $R_2$  in series, which of the circuit diagrams show the correct way of connecting the voltmeter? *1mark*



- A. I and II
- B. II and III
- C. I and III
- D. II and IV

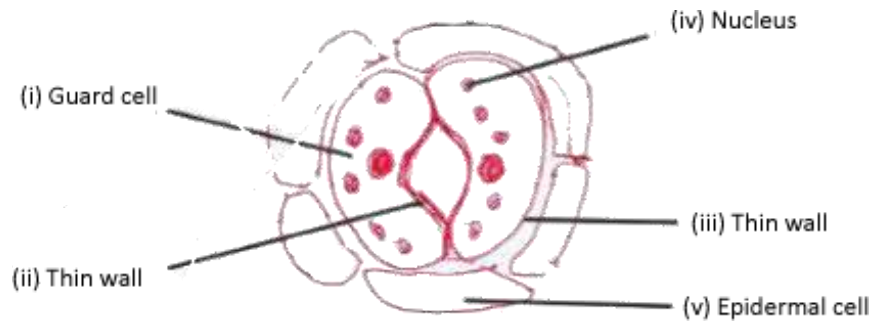
**Q.36. In the experiment on finding equivalent resistance of two resistors, connected in series, four students I, II, III and IV set up the circuit as shown below: *1mark***



**The correct connections have been made by student:**

- A. I
- B. II
- C. III
- D. IV

**Q.37. In the following diagram of the stomatal apparatus, which parts are correctly labelled? *1mark***



- A. (i) and (v)
- B. (ii) and (v)
- C. (iv) and (ii)
- D. (v) and (iv)

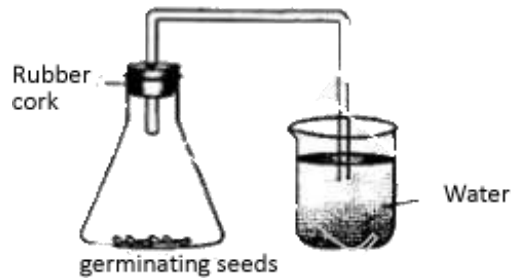
**Q.38. To determine that light is essential for photosynthesis, following are the steps, but not in sequence: 1mark**

- (i) Pluck the leaf and do the starch test.
- (ii) Keep the selected plant in sunlight.
- (iii) Destarch the plant for 48 - 72 hours.
- (iv) Cover the leaf with black paper strip.

**The correct sequence is:**

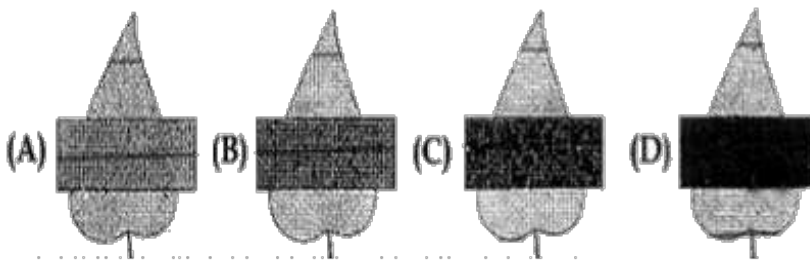
- A. (iii), (i), (ii), (iv)
- B. (iii), (ii), (iv), (i)
- C. (iii), (iv), (ii), (i)
- D. (i), (ii), (iv), (iii)

**Q.39. The following experiment was set up to show that a gas is given out during respiration. But there was no rise in the level of water. This was because: 1mark**



- A. Germinating seeds have not been kept under water in the flask.
- B. Water is kept in the beaker instead of lime water.
- C. The cork on the flask is made of rubber.
- D. No substance is kept in the flask to absorb the gas given out by the seeds.

**Q.40.** In an experiment on photosynthesis students were instructed to cover a portion of a leaf of a destarched potted plant with opaque paper as shown: *1mark*



"A" covered one of the leaves with red strip, "B" with green, "C" with blue, "D" with black. When the starch test was done on the leaves after 4 hours, the result showed no starch in:

- A. The portion covered with red, green and blue strips
- B. The portion covered with green strips
- C. The portion covered with black and blue strips
- D. Any of the covered portions

**Q.41.** Which of the following stain is used to see the stomata during temporary mount of leaf peel? *1mark*

- A. Methylene blue
- B. Cotton blue
- C. Safrainin
- D. None of these

**Q.42. A student sets up the apparatus for the experiment to show that CO<sub>2</sub> is released during respiration. After two hours he would observe: *1mark***

- A. KOH turning milky.**
- B. Water level rising in the bent tube in the beaker.**
- C. Water level decreasing in the bent tube.**
- D. No change in water level in the bent tube.**